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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,145	09/15/2003	His Majesty King Bhumibol Adulyadej	Royal 001-2003.usa	8737

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The Office of His Majesty's Principal
Private Secretary
BANGKOK, 10200
THAILAND

EXAMINER	
HOGAN, JAMES SEAN	
ART UNIT	PAPER NUMBER
3752	
MAIL DATE	DELIVERY MODE
09/30/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/662,145	BHUMIBOL ADULYADEJ, HIS MAJESTY KING	
	Examiner	Art Unit	
	JAMES S. HOGAN	3752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 June 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,11,13,14,16,18 and 20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,11,13,14,16,18 and 20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicant's arguments filed June 24, 2008 have been fully considered but they are not persuasive. See below for explanation.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 11, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Montmory in view of U.S Patent No. 5,357,865 to Mather and further in view of U.S. Patent No. 3,613,992 to Knollenberg, and even further in view of U.S. Patent No. 6,056,203 to Fukata

Claims 1 and 11 claim a process of rainmaking comprising the steps of triggering, fattening, attacking and enhancing.

Montmory ('271) discloses a process of rainmaking (i.e., cloud seeding), via aircraft delivery, which teaches much of the claimed techniques as "triggering," "fattening" and "attacking". The triggering of Montmory is the use of a salt namely, sodium chloride, as in claim 1 and also calcium chloride for activation of a cloud formation, and which also lend information for the use of "fattening" with dimethyl sulfoxide (DMSO). Furthermore, Montmory discloses part of the step of "attacking" (that is, the use of a device, as

described in column 4, lines 32-59, and Col. 4, lines 51-60) where the salts are sprayed into and at the base of clouds from an aircraft (as per claim 17). Montmory teaches the dispersion of known cloud-seeding chemicals (Col. 3, Lines 30-40) in an atmosphere "likely to give rise to precipitations" and although further teaches the performance of the known chemicals "once the relative humidity exceeds 40 to 50 percent", it would have been obvious to proclaim a desired cloud-seeding at a relative humidity of not less than 60 percent, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering a workable range involves only routine skill in the art. See in *re Aller*, 105 USPQ 233. Further, components of the teaching of "attacking" not taught by Montmory are taught by the combination of the procedures taught by Mather ('865) and Knollenberg ('992). Mather ('865) teaches the use of sodium chloride as a rain initiation agent used for cloud seeding (claim 1) upwind and above a cloud. Knollenberg teaches the use of urea in a method for producing rain or snow by applying urea to the area of a cloud where temperatures are known to be between 6°C and –15°C. As per claim 17, it can be argued that the application of any of the known agent in any form of physical state, liquid (as in Montmory), solids (as in Nelson et al), or gaseous (as in Mather), can be considered to be one known by one of ordinary skill. Further, it can be argued that at the base of any cloud is where these temperatures can be found, as the internal temperature of a cloud decreases with respect to higher elevation, one can choose any level of a cloud that one believes the optimum conditions for initiating rainfall exist, thus the desire to disperse the known chemicals from a mid cloud area. Neither Montmory ('271) nor Mather ('865) and

Knollenberg ('992) teach the process of "enhancing". Fukata ('203) teaches to "enhance" the volume of rainfall by the use of silver iodide flairs seeded into the top of a cloud (at the part of the cloud where the temperature is between 0°C and –15°C) and further discloses that ice crystals formed are by the use of sliver iodide flares and will be affected by the effect of a cloud becoming more transparent and will change to liquid precipitation. By combining Montmory ('271), Fukata ('203), Mather ('865) and Kollenberg ('992), the Super Sandwich technique is taught, and, as per claim 18, Montmory teaches the desire to prevent hail during the process of initiating rainfall. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have simultaneously combined the known cloud seeding techniques, in any sequence of Montmory, Fukata Mather (865) and Knollenberg ('992) to insure the eruption of rain or to prevent hail.

Claim 13, 14, 16 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,357,865 to Mather in view of U.S. Patent No. 4,362,271 to Montmory and further in view of U.S. Patent No. 3,659,785 to Nelson et al. and even further in view of U.S. Patent No. 6,613,992 to Knollenberg, and still even further in view of U.S. Patent No. 5,628,455 to Fukata and yet still even further in view of U.S. Patent No. 6,056,203 to Fukata.

The rejections of claims 1 and 11 above address the techniques referred to by the Applicant as "triggering", "fattening", "attacking" and "enhancing" and will not be replicated here. As per claim 13, the technique of relocating a cloud, referred to by the Applicant as "moving", is taught by Nelson et al. ('785). As per claim 14, the dispersion

of fog (i.e. a low cloud) is taught by Nelson et al using flakes of hydroscopic chemicals (Col. 1, line 9-17). Calcium chloride is named as a known exothermic hygroscopic chemical used for this purpose (Col. 2, line 30-34). As vapor pressure reduces, the fog becomes buoyant, and therefore rises. A prevailing wind would then move the cloud. Regarding claim 16, in which the use of "fattening" and "attacking" are used, the rejections of claim 1 above address those techniques, and will not be replicated here, nor the use of the chemicals in a desired state (i.e. powder). The resultant of those techniques, upwind of a target area will result in the movement of the enhanced cloud. Therefore, it would be obvious to one skilled in the art at the time the invention was made to have applied the effect of fog dispersion on a cloud in order to raise its elevation and subsequently move it.

Regarding claim 20, the use of calcium chloride (exothermic-hygroscopic), urea (endothermic-hygroscopic) and sodium chloride (hygroscopic) in any combination is taught in the rejections above. Therefore it would have been obvious to one skilled in the art at the time the invention was made to have combined the various cloud seeding and rainmaking techniques, in any combination, in order to promote rainfall onto any desired land mass, including that of between hills and mountains.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES S. HOGAN whose telephone number is (571)272-4902. The examiner can normally be reached on Mon-Fri, 6:00a-3:00p EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on (571)272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. S. H./
Examiner, Art Unit 3752

/Len Tran/
Supervisory Patent Examiner, Art Unit 3852